UNITED STATES PATENT APPLICATION

FOR

AN E-COMMERCE STORE MANAGEMENT USER INTERFACE FOR PERFORMING WEB SITE UPDATES

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ORCL 2000-136-01

July 9, 2001

AN E-COMMERCE STORE MANAGEMENT USER INTERFACE FOR PERFORMING WEB SITE UPDATES

FIELD OF THE INVENTION

The field of the present invention pertains to the management of Web pages on a distributed computer network. More particularly, the present invention relates to a method and system for implementing an e-commerce store management user interface for performing Web page updates and changes on an e-commerce Internet site.

BACKGROUND OF THE INVENTION

One of the most important societal changes of recent times has been the emergence of the Internet, more particularly, the World Wide Web (e.g., the Web), as a predominant communications medium. The Web presents a navigable aggregation of Web page content of all the Web connected computers. This navigable aggregation content is linked in such a way as to offer users access to information and documentation, typically in the form of interactive hypermedia, or Web pages. Web pages describe documents in which hypertext links are used connecting a multitude of combinations of graphics, audio, video, and text. Such combinations are often interlinked and interconnected in nonlinear, nonsequential manners.

With the widespread emergence of Internet communications technologies (e.g., the Web), a variety of electronic commerce facilitating schemes were developed. One such scheme involved the use of dedicated Web sites for implementing business-to-business and business-to-consumer buying and selling exchanges on the Internet. The term "electronic commerce" or "e-commerce" originally evolved from remote forms of electronic shopping to mean all aspects of business and market processes enabled by wide area communications networks, namely, the Internet and the World Wide Web based network technologies. E-commerce is a rapidly growing field, and is generally understood to mean doing business on-line or selling and buying products and services through Web (e.g., Internet based) storefronts or through other similar distributed computer networks. In general, electronic commerce is in many ways similar to the more traditional catalog based commerce schemes. The e-commerce exchanges, or e-commerce "storefronts", have evolved to focus on the specific needs and requirements of buying and selling via one or more Web sites on the Internet.

As the use of e-commerce storefronts have proliferated, increasing amounts of effort and resources are dedicated towards the implementation and maintenance of the numerous Web pages that actually comprise the storefronts. For example, many e-commerce storefronts resemble a form of electronic commerce catalog based buying and selling, or simply electronic catalogs, wherein the user progresses through a series of related Web pages, examining various aspects of articles being considered for purchase. The various types of electronic commerce "catalog-type" Web sites has become a preferred method of efficiently making available in large number of goods and services to a large number of potential buyers. Electronic catalogs provide a

convenient means for aggregating large number of potential items for sale and efficiently disseminating information about these items to a large number of potential buyers. However, updating information about the various articles for sale, such as, for example, prices, styles, features, and the like, requires the updating and editing of the numerous Web pages that comprise the Web site storefronts.

In accordance with the prior art, the maintenance of an e-commerce storefront is a specialized task requiring specialized skills and tools. For example, Web site maintenance or updates are usually performed by skilled Web page authors trained to use specialized tools. Web page authors use specialized software such as HTML (hypertext markup language), Java, XML (extensible markup language), and the like, to create and/or update Web pages and to format the various hypermedia links, objects, fields, etc., within the Web pages. Web page authors also use a variety of tools to track the structure of the links between the many Web pages that comprise the Web site. The creation and updating of such large Web sites, having many hundreds of complex interlinked, interrelated Web pages, has become a very technical and manpower intensive undertaking.

Thus, a significant problem exists with regard to the cost-effective management of an e-commerce storefront. The prior art does not provide a store manager user interface which allows the store manager to pick tasks he/she wants to perform (add a product, update product information, change image, change price, etc.) and then allows the user to select the product or product hierarchy to which the changes needs to be applied. The limitation of such changes and updates often requires the rebuilding of the constituent Web

pages. Rebuilding Web pages is usually not a cost-effective option. Changes to the hyperlinks of a document, as with changes to the color, tabs, buttons, or the like, often requires completely rebuilding the page. With current Web site authoring tools there exists very tight constraints with regard to the code of the page. It is difficult to simply "cut and paste" changes into the page. Any new hyperlinks have to be verified to ensure the linked to the correct Web pages. Changing hyperlinks introduces the possibility of "breaking" existing hyperlinks from other connected documents. Thus, it becomes expensive to implement changes to, for example, respond to competitors. It becomes expensive to quickly modify a user flow in response to changes in the products.

In addition, any changes which are made have to be verified by accessing the selling via a customer style Web browser in order for the store manager to see exactly what the customer sees. Verification is required in order to ensure the updates having carried out correctly. Mistakes require a new iteration of updates/changes and subsequent re-verification.

Thus, what is required is a solution that allows the easy updating of e-commerce storefront information. The required solution should allow a store manager to change product information (e.g., price, product images, feature information, etc.) in an intuitive manner. The required solution should allow immediate verification of any changes made. The present invention provides a novel solution to the above requirements.

SUMMARY OF THE INVENTION

Embodiments of the present invention provide a solution that allows the easy updating of e-commerce storefront information. The solution of the present invention allows a store manager to change product information (e.g., price, product images, feature information, etc.) in an intuitive manner. The solution of the present invention allows immediate verification of any changes made.

In one embodiment, the present invention is implemented as a computer implemented, web browser based, e-commerce storefront management user interface to enable efficient updating of the Web pages of the storefront. The update method begins with the step of accessing a Web page out of a plurality of Web pages of an e-commerce Web site. Log in information is then submitted to the Web site. The log in information can include an authentication to obtain privileges for modifying the Web pages of the Web site. Once logged in, an item on the Web page is selected for editing and modification. The selected item is then edited and the edited data is submitted to the Web site. Once received by the Web site, an updated version of the Web page is provided for viewing and verification of the edited item.

The user interface is a web browser based user interface executing on a client machine to access the Web site and view the Web pages. The update method can further include the step of logging out of the Web site prior to receiving the updated version of the Web page. The updated version of the Web page is viewed using a web browser on a client machine to verify the appearance of the edited item, the appearance being the same as the

appearance to a standard user accessing the updated version of the Web page. A hierarchy of privilege levels can be maintained, such that separate authentications are required to obtain a first and second privilege levels for editing the Web page, wherein the second privilege level is higher than the first privilege level for modifying a greater number of items of the Web page than the first privilege level.

A workflow notification request can be automatically generated by the Web site in order to obtain an approval of the updated version of the Web page, wherein the updated version of the Web page is not provided until the approval is obtained. For example, managers having a lower privilege level can modify numerous items of the Web page, without having the modify items "go live" until they are approved by a manager having a higher privilege level.

In this manner, e-commerce storefront management user interface allows a manager to easily update the e-commerce storefront information, for example, in response to changing market conditions. The user interface allows a store manager to change product information (e.g., price, product images, feature information, etc.) in an intuitive manner, and immediately verify any changes made.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is illustrated by way of example and not by way of limitation, in the Figures of the accompanying drawings and in which like reference numerals refer to similar elements and in which:

Figure 1 shows a diagram of an electronic commerce Web site in accordance with one embodiment of the present invention.

Figure 2 shows a diagram of a customer view of a Web page in accordance with one embodiment of the present invention.

Figure 3 shows a manager view of Web page after an item has been selected for modification by the manager and a manager editing view of Web page wherein the selected item is changed/modified.

Figure 4 shows a flowchart of the steps of an e-commerce storefront management user interface update process in accordance with one embodiment of the present invention is shown.

Figure 5 shows the components of a computer system platform in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Reference will now be made in detail to the embodiments of the invention, examples of which are illustrated in the accompanying drawings. While the invention will be described in conjunction with the preferred embodiments, it will be understood that they are not intended to limit the invention to these embodiments. On the contrary, the invention is intended to cover alternatives, modifications and equivalents, which may be included within the spirit and scope of the invention as defined by the appended claims. Furthermore, in the following detailed description of the present invention, numerous specific details are set forth in order to provide a thorough understanding of the present invention. However, it will be obvious to one of ordinary skill in the art that the present invention may be practiced without these specific details. In other instances, well known methods, procedures, components, and circuits have not been described in detail as not to unnecessarily obscure aspects of the present invention.

Embodiments of the present invention are directed towards a computer implemented method for the updating and maintenance of e-commerce storefront information. The present invention allows a store manager to change product information (e.g., price, product images, feature information, etc.) in an intuitive manner. The present invention allows immediate verification of any changes made. The present invention and its benefits are further described below.

Notation and Nomenclature

Some portions of the detailed descriptions which follow are presented in terms of procedures, steps, logic blocks, processing, and other symbolic representations of operations on data bits within a computer memory. These descriptions and representations are the means used by those skilled in the data processing arts to most effectively convey the substance of their work to others skilled in the art. A procedure, computer executed step, logic block, process, etc., is here, and generally, conceived to be a self-consistent sequence of steps or instructions leading to a desired result. The steps are those requiring physical manipulations of physical quantities. Usually, though not necessarily, these quantities take the form of electrical or magnetic signals capable of being stored, transferred, combined, compared, and otherwise manipulated in a computer system. It has proven convenient at times, principally for reasons of common usage, to refer to these signals as bits, values, elements, symbols, characters, terms, numbers, or the like.

It should be borne in mind, however, that all of these and similar terms are to be associated with the appropriate physical quantities and are merely convenient labels applied to these quantities. Unless specifically stated otherwise as apparent from the following discussions, it is appreciated that throughout the present invention, discussions utilizing terms such as "processing" or "computing" or "communicating" or "instantiating" or "registering" or "displaying" or the like, refer to the action and processes of a computer system (e.g., computer system 512 of Figure 5), or similar electronic computing device, that manipulates and transforms data represented as physical (electronic) quantities within the computer system's registers and memories into other data similarly represented as physical quantities within

the computer system memories or registers or other such information storage, transmission or display devices.

<u>Method and System of the Invention</u>

Referring now to Figure 1, a diagram of an electronic commerce Web site storefront system 100 in accordance with one embodiment of the present invention is shown. As depicted in Figure 1, system 100 includes an e-commerce exchange server host, hereafter Web server 101, communicatively coupled to a plurality of customer clients 120-124 via a distributed computer network, hereafter Internet 150. Web server 101 is also coupled to a manager client 130 via a dedicated link 131.

The Web server 101 functions as the central communications point for the e-commerce operations of the storefront system 100. Web server 101 hosts e-commerce operations by, for example, conducting data collection and management of product information (e.g., items, services, or the like), maintaining credit information for the various clients 120-124, performing billing and debit operations, and the like. The clients 120-124 communicate with Web server 101 via the communications protocols of the Internet 150 (e.g., HTML, PPP, XSL, etc.). Web server 101 maintains information with regard to the various products for sale, buyer information, and the like, via data stored system 102 (e.g., typically a large database).

Referring still to Figure 1, in accordance with the present embodiment, Web server 101 implements the method for implementing catalog inventory auctions hosted on system 100 in conjunction with manager client 130. In the present embodiment, manager client 130 is used to implement a web browser

based, e-commerce storefront management user interface to enable efficient updating of the Web pages of the storefront maintained on Web server 101.

To update the Web pages of the storefront, the manager, or Web master, etc., accesses Web pages of Web server 101, in this case, via an "intranet" link 131. The user interface is a web browser based user interface executing on client machine 130 to access the Web site and view the Web pages maintained by Web server 101. Log in information is then submitted to the Web site (e.g., Web server 101). The log in information can include an authentication to obtain privileges for modifying the Web pages of the Web site. For example, a password can be transmitted to Web server 101 in order to log on as an "administrator" having administrator privileges with regard to editing the Web pages. Once logged in, an item on the Web page is selected for editing and modification. The selected item is then edited and the edited data is submitted to the Web site via the intranet link 131.

An updated version of the Web page is provided for viewing and verification of the edited item via an Internet communications link 132 which functions in the same manner as the communications links of clients 120-124. This allows manager client 130 to visually verify the appearance of the updated Web page. By accessing the updated Web page via the Internet link 132 in the same manner as clients 120-124, the manager can verify the correct appearance of the updated Web page with a high degree of confidence.

Referring still to Figure 1, the update method preferably includes the step of logging out of the Web site prior to receiving the updated version of the Web page. A hierarchy of privilege levels are preferably maintained, such that

separate authentications are required to obtain a first and second privilege levels for editing the Web page, wherein the second privilege level is higher than the first privilege level for modifying a greater number of items of the Web page than the first privilege level.

A workflow notification request may be automatically generated by the Web site in order to obtain an approval of the updated version of the Web page, wherein the updated version of the Web page is not provided until the approval is obtained. For example, managers having a lower privilege level can modify numerous items of the Web page, without having the modify items "go live" until they are approved by a manager having a higher privilege level.

Referring now to Figure 2, a diagram of the Web page 200 is shown. As depicted in Figure 2, Web page 200 shows images of three books being presented for purchase by customer, Book A, Book B, and Book C, each having a corresponding image 210-212, description 215-217, and price 221-223. Web page 200 shows the customer view image of the Web page as it would appear on the Web browsers of clients 120-124. This is the same view of the Web page 200 as seen by the manager client 130.

As described above, to update the Web pages of the storefront, the manager, or Web master, etc., accesses Web pages of Web server 101, in this case, Web page 200. The manager/Web master then submits log in information including an authentication (e.g., password, etc.) to obtain administrator/modification privileges for modifying Web page 200. Once logged in, an item on the Web page is selected for editing and modification.

Figure 3 shows a manager view of Web page 200 after an item has been selected for modification by the manager and a manager editing view of Web page 200 wherein the selected item is changed/modified.

As depicted on the left side of Figure 3 in the manager view, the manager/Web master has highlighted Book A, the selected item, for editing. In this embodiment, this is shown by the highlighted box 230 encompassing Book A. Once highlighted, a modify button 231 can be actuated (e.g., via mouse or other pointing device).

Once modify button 231 is actuated, the manager view changes to the manager edit view shown on the right hand side of Figure 3. In this view, the various attributes of Book A can be changed. In this example, attributes include the name of the book, the description of the book, the price, and the representative image. Once changes are made, the manager presses a submit button 240 to submit the changes to the Web server 101.

Web server 101, upon receiving the submitted changes, generates an updated Web page. The update Web page can be viewed by the manager client 130 via the intranet link 131 or, preferably, via the Internet link 132. The update Web page will appear as the customer view Web page 200 shown in Figure 2, allowing the manager to visually verify the correctness of any changes made in the manager edit view shown in Figure 3.

Referring now to Figure 4, a flowchart of the steps of an e-commerce storefront management user interface update process 400 in accordance with one embodiment of the present invention is shown. Process 400 shows steps

involved in accessing the Web pages of an e-commerce storefront Web site and modifying the Web pages in the manner described above.

Process 400 begins in step 401, where a manager accesses the Web pages of the e-commerce Web site. As described above, the manager accesses the Web pages (e.g., Web page 200 of Figure 2) of the Web site (e.g., Web server 101 of Figure 1) using a client machine running a Web browser (e.g., manager client 130).

In step 402, the manager logs on to Web server 101. As described above, this logon includes an authentication process whereby the manager verifies his/her identity (e.g., password, etc.) to obtain modification/editing privileges for the Web site.

In step 403, using the Web browser interface, the manager locates the specific item to modify on the Web page.

In step 404, once the item is selected, the manager edits the associated information using the Web browser interface.

In step 405, the manager hits the submit button (e.g., submit button 240 of Figure 3) to submit the changes to the Web site. As described above, a workflow notification request may be automatically generated by the Web site in order to obtain an approval of the updated version of the Web page, wherein the updated version of the Web page is not provided until the approval is obtained.

In step 406, an updated Web page is generated by the Web site (e.g., Web server 101) and the changes made to the Web page are viewed by the manager using the Web browser interface. As described above, an Internet communications link (e.g., communications link 132 of Figure 1) is preferably used to view the update Web page in the same manner as external clients 120-124. This allows the manager to see the updated Web page as it would appear to the external clients 120-124.

In this manner, e-commerce storefront management user interface allows a manager to easily update the e-commerce storefront information, for example, in response to changing market conditions. The user interface allows a store manager to change product information (e.g., price, product images, feature information, etc.) in an intuitive manner, and immediately verify any changes made.

Computer System Platform

With reference now to Figure 5, a computer system 512 in accordance with one embodiment of the present invention is shown. Computer system 512 shows the components of a computer system in accordance embodiments of the present invention that provides the execution platform for implementing certain software based functionality of the present invention. As described above, certain processes and steps of the present invention are realized, in one embodiment, as a series of instructions (e.g., software program) that reside within computer readable memory units of a computer system (e.g., system 512) and are executed by the processor(s) of system 512. When executed, the instructions cause the computer system 512 to implement the functionality of the present invention as described above.

In general, computer system 512 shows the basic components of a computer system used to implement "server" machines and "client" machines. Computer system 512 comprises an address/data bus 500 for communicating information, one or more central processors 501 coupled with the bus 500 for processing information and instructions, a computer readable volatile memory unit 502 (e.g., random access memory, static RAM, dynamic, RAM, etc.) coupled with the bus 500 for storing information and instructions for the central processor(s) 501, a computer readable non-volatile memory unit (e.g., read only memory, programmable ROM, flash memory, EPROM, EEPROM, etc.) coupled with the bus 500 for storing static information and instructions for the processor(s) 501. System 512 also includes a mass storage computer readable data storage device 504 such as a magnetic or optical disk and disk drive coupled with the bus 500 for storing information and instructions. Optionally, system 512 can include a display device 505 coupled to the bus 500 for displaying information to the computer user, an alphanumeric input device 506 including alphanumeric and function keys coupled to the bus 500 for communicating information and command selections to the central processor(s) 501, a cursor control device 507 coupled to the bus for communicating user input information and command selections to the central processor(s) 501, and a signal generating device 508 coupled to the bus 500 for communicating command selections to the processor(s) 501.

The foregoing descriptions of specific embodiments of the present invention have been presented for purposes of illustration and description. They are not intended to be exhaustive or to limit the invention to the precise forms disclosed, and obviously many modifications and variations are possible

in light of the above teaching. The embodiments were chosen and described in order to best explain the principles of the invention and its practical application, to thereby enable others skilled in the art to best utilize the invention and various embodiments with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the Claims appended hereto and their equivalents.